

Patent
Attorney's Docket No. 1015290-000757

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of)	Mail Stop AF
Andreas Fischer et al.)	Group Art Unit: 1763
Application No.: 10/736,666)	Examiner: SYLVIA MACARTHUR
Filed: December 17, 2003)	Confirmation No.: 5341
For: TEMPERATURE CONTROLLED)	
HOT EDGE RING ASSEMBLY FOR)	
REDUCING PLASMA REACTOR)	
ETCH RATE DRIFT)	

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Commissioner for Patents
P.O. Box 1450
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Sir:

Applicants request review of the final rejection of Claims 1-25 in the above-identified application. No amendments are being filed with this Request. For at least the following reasons, withdrawal of the outstanding rejections is respectfully requested. This Request is being filed with a Notice of Appeal.

Overview

In the Final Official Action, the following rejections were made: Claims 1-5, 7-9, 14-16, 23 and 24 stand rejected under 35 U.S.C. §103(a) as allegedly unpatentable over Hubacek (U.S. Patent No. 6,475,336) ("Hubacek ") in view of Masuta et al. (U.S. Patent No. 6,277,008) ("Masuta"); Claims 6 and 17 stand rejected under 35 U.S.C. §103(a) as allegedly unpatentable over Hubacek and Masuta and further in view of Zuniga et al. (U.S. Patent No. 6,251,215) ("Zuniga"); and Claims 10-13, 17 and 22 stand rejected under 35 U.S.C. §103(a) as allegedly unpatentable over Hubacek and Masuta, and further in view of Koai et al. (U.S. Patent No. 6,159,299) ("Koai"). These rejections should be withdrawn for the following reasons.

A. Improper Combination of Hubacek and Masuta - Claims 1-5, 7-9, 14-16, 23 and 24

1. Examiner's Position

The Official Action cites Masuta for disclosure of a lower conductive ring and alleges that it would have been obvious to include the conductive ring in the Hubacek ring arrangement (Final Official Action, page 2, ¶ 3). Applicants respectfully disagree.

2. Impermissible Hindsight

First, Applicants respectfully submit that the Official Action uses "hindsight reconstruction" forbidden by the Federal Circuit to "pick and choose among individual elements of assorted prior art references to recreate the claimed invention without the requisite motivation." *Symbol Technologies Inc. v. Opticon Inc.*, 19 USPQ2d 1241, 1246 (Fed. Cir. 1991). As discussed below, Masuta does not provide substantial evidence in support of the alleged motivation to modify Hubacek. Moreover, the Official Action has not provided any reasoning as to why a skilled artisan with no knowledge of the claimed invention would look to Masuta, which is related to chemical mechanical polishing, to solve a problem related to plasma etching.

3. Lack of Motivation or Suggestion for Combination

Second, the Official Action further states that "[t]he motivation to construct the ring of Hubacek with the lower conductive ring of Masuta is that the lower conductive portion provides more mechanical strength to the overall ring and allows for greater throughput" (emphasis added) (Final Official Action at pages 2-3). However, an obviousness rejection must be based on "evidence relevant to the finding of whether there is a teaching, motivation, or suggestion to select and combine the references

relied on as evidence of obviousness." *In re Lee*, 277 F3d 1338, 61 USPQ2d 1430, 1434 (Fed. Cir. 2002) (emphasis added). Furthermore, the Patent Office must "identify specifically the principle, known to one of ordinary skill, that suggests the claimed combination." *Id.* However, there is no basis in the cited references to support the Examiner's allegation that increasing strength of Hubacek's hot edge ring would somehow increase wafer plasma etching "throughput," as asserted in the Official Action.

Hubacek relates to a method for plasma etching semiconductor substrates (column 1, lines 7-10). Hubacek does not use the hot edge ring assembly for chemical mechanical polishing and the hot edge ring is not subjected to any rotational forces or pressure associated with chemical mechanical polishing, requiring coupling ring **17** and edge ring **18** to possess increased mechanical strength in the plasma etching apparatus in which the coupling ring **17** and edge ring **18** are used. For at least this reason, Applicants respectfully submit that the Official Action fails to provide any "teaching, motivation, or suggestion to select and combine the references relied on as evidence of obviousness" in support of the alleged motivation to modify Hubacek.

4. Nonanalogous Art

As stated in MPEP § 2141.01(a), the examiner must determine what is "analogous prior art" for the purpose of analyzing the obviousness of the subject matter at issue. In order to rely on a reference as a basis for rejection of an applicant's invention, the reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned." *In re Oetiker*, 977 F.2d 1443, 1446, 24 USPQ2d 1443,

1445 (Fed. Cir. 1992). Masuta is not in the field of plasma etching and because Masuta relates to chemical mechanical polishing, Masuta is not reasonably pertinent.

The rejection is also traversed on the basis that Masuta is nonanalogous art. Applicants respectfully submit that Masuta, which relates to a chemical mechanical polishing apparatus (column 1, lines 5-6) is not in the field of the claimed subject matter. Masuta discloses that "retainer ring **101** holds the substrate **105** and prevents lateral shift of the substrate **105**" (column 3, lines 35-36) during chemical mechanical polishing on rotating polishing table **110** (column 3, lines 30-31, lines 42-51). Masuta further discloses that retaining ring **101** is brought into contact with polishing pad **102** under a pressure of 7 psi (column 3, line 67; column 4, lines 1-2) and that the mechanical strength of retainer ring **101** is increased when it contains metal portion **101b** (column 4, lines 3-8). As such, Masuta is not in the field of Applicants' endeavor. Applicants further submit that Masuta is not reasonably pertinent to the particular problem with which the inventor was concerned, improving uniformity and reducing etch rate drift at the edge of a wafer during plasma processing of semiconductor substrates such as wafers (specification, paragraph [0015]; Figure 5). As such, nonanalogous Masuta has been improperly combined with Hubacek.

B. Claims 6 and 17

The Official Action acknowledges that Hubacek and Masuta do not teach the claim features recited in claims 6 and 17, but cites Zuniga to allegedly cure the deficiencies of Hubacek and Masuta (Final Official Action, at page 5, ¶ 4). However, Zuniga, also related to chemical mechanical polishing (column 1, lines 7-9), discloses that an "adhesive layer **186** may be a two-part slow-curing epoxy" (column 6, lines 43-45). However, Zuniga does not disclose "a thermally conductive

elastomer" as recited in Claims 6 and 17. The Official Action states that "[a] thermally conductive elastomer is included in one of those methods/materials known in the art," (Final Official Action at page 6) but has provided no evidence to support this position. Accordingly, the combination of applied references does not teach or suggest all the claim features. In addition, Applicants respectfully submit that Claims 6 and 17 are patentable over the applied references for at least the same reasons as those discussed above regarding Claims 1 and 16.

C. Claims 10-13 and 22

The Official Action acknowledges that Hubacek and Masuta do not teach the claim features recited in Claims 10-13, 17 and 22, and cites Koai to allegedly cure the deficiencies of Hubacek and Masuta (Final Official Action, at pages 6-7). Koai does not disclose a bolt "having a tapered head," as recited in Claim 10. Additionally, Koai fails to cure the above-described deficiencies regarding the combination of Hubacek and Masuta, with respect to Claims 1 and 16.


Conclusion

For at least the foregoing reasons, Applicants respectfully submit that all pending claims are allowable, and this application is in condition for allowance.

Respectfully submitted,

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